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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,358	04/24/2001	Zheng Chen	MS1-686US	8976
22801	7590	07/07/2004	EXAMINER	
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			LE, NHAN T	
			ART UNIT	PAPER NUMBER
			2685	3

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/843,358

Applicant(s)

CHEN ET AL.

Examiner

Nhan T Le

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it exceeds 150 words.

Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 does not specify what elements are being included in the language system.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 3, 4, 5, 7, 9, 10, 15, 16, 17, 19, 20, 21, 23, 29, 31, 32, 36, 37, 39, 40, 41, 42, 45, 46, 47, 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Ho et al (US 6,307,541).

As to claims 1, 29, 36, Ho teaches a mobile device, comprising: a keypad of number keys, the number keys having associated letters (see fig. 2, number 210, col. 3, lines 57-65); a language system to receive an input string entered via the keypad that is representative of one or more phonetic characters and generate likely language characters based on the input string (see fig. 5, number 530, col. 12, lines 8-24); a display to present the likely language characters for user selection (see fig. 2, number 230, col. 3, lines 57-65); and the language system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection (see fig. 6, col. 12, lines 25-46).

As to claims 3, 4, 31, 37, 39, 40, Ho teaches a mobile device as recited in claim 1, wherein the likely language characters are presented on the display in an index that associates selection keys of the keypad with the language characters so that user entry of a selection key results in a selection of a corresponding language character and user entry of a non-selection key results in further input (see col. 8, lines 39-51); the selection

keys being selected based on whether the letters associated therewith follow the phonetic characters already entered (col. 11, lines 47-55).

As to claims 5, 32, 41, Ho teaches a mobile device as recited in claim 1, wherein the language system includes an association module that automatically presents the language characters as the user depresses individual keys (see fig. 4, number 440, col. 12, lines 3-7).

As to claims 7, 9, 10, 42, Ho teaches a mobile device as recited in claim 1, wherein the language system includes a language model to statistically derive the language characters; converts the phonetic characters to the language characters (see fig. 4, number 420, col. 11, line 65- col. 12, line 6); includes a direct key-based search engine that generates the language characters based on a key sequence entered on the keypad in lieu of converting the phonetic characters to the language characters (see fig. 4, number 420, col. 11, line 65- col. 12, line 6).

As to claim 15, Ho teaches a mobile device as recited in claim 1, further comprising a scroll control key to present other likely language characters (see fig. 2, numbers 221, 222, col. 3, lines 57-65).

As to claim 16, Ho inherently teaches a mobile device as recited in claim 1, embodied as a mobile phone.

As to claims 17, 45, 46, Ho teaches a mobile device, comprising: a keypad of number keys, the number keys having associated letters of an alphabet (see fig. 2, number 210, col. 3, lines 57-65); and a direct key-based search engine that generates

possible language characters that are not part of the alphabet based on a key sequence entered on the keypad (see fig. 4, number 420, col. 11, line 65- col. 12, line 6).

As to claim 19, Ho teaches a mobile device as recited in claim 1, wherein the language system includes an association module that automatically presents the language characters as the user depresses individual keys (see fig. 4, number 440, col. 12, lines 3-7).

As to claim 20, Ho inherently teaches a mobile device as recited in claim 1, embodied as a mobile phone.

As to claims 21, 47, 48, Ho teaches a mobile device, comprising: a keypad of number keys, the number keys having associated letters of an alphabet (see fig. 2, number 210, col. 3, lines 57-65); an association module that associates a key sequence with language characters that are not part of the alphabet (see fig. 4, number 420, col. 11, line 65- col. 12, line 6); and a display to present the possible language characters as the user depresses individual keys based on the key sequence (see fig. 2, number 230, col. 3, lines 57-65).

As to claim 23, Ho inherently teaches a mobile device as recited in claim 21, embodied as a mobile phone.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 18, 22, 30, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al (US 6,307,541) in view of Hon et al (US 2001/0044724).

As to claims 2, 30, 38, Ho fails to teach a mobile device as recited in claim 1, wherein the phonetic characters are Chinese Pinyin and the language characters are Chinese Hanzi. Hon teaches the phonetic characters are Chinese Pinyin and the language characters are Chinese Hanzi (see page 1, paragraph 007). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Hon into the system of Ho in order to convert the Chinese language from one language character to another language character.

As to claims 18, 22, Ho teaches a mobile device, wherein the alphabet is an English alphabet and the language characters are Chinese (see col. 13, lines 13-16). Ho fails to teach the language characters are Chinese Hanzi. Hon teaches the language characters are Chinese Hanzi (see page 1, paragraph 007). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Hon into the system of Ho in order to convert the Chinese language from one language character to another language character.

3. Claim 6, 24, 26, 33, 49, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al (US 6,307,541) in view of Chang et al (US 5,987,447).

As to claim 6, 33 Ho fails to teach a mobile device as recited in claim 1, wherein the language system includes a sentence-based search engine to derive the language characters based on context of the input string within one or more words of a common sentence. Chang teaches the language system includes a sentence-based search

engine to derive the language characters based on context of the input string within one or more words of a common sentence (see col. 2, lines 3-19). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Chang into the system of Ho in order to increase the ratio of hitting the right character.

As to claims 24, 49, 50, Ho teaches a mobile device, comprising: a keypad of number keys, the number keys having associated letters of an alphabet (see fig. 2, number 210, col. 3, lines 57-65); a language system to receive an input string entered via the keypad that is representative of one or more phonetic characters and convert the phonetic characters to language characters that are not part of the alphabet using a statistical language model (see fig. 5, number 530, col. 12, lines 8-24) that utilizes at least one neighboring word in a common sentence; and a display to present the language characters for user selection (see fig. 2, number 230, col. 3, lines 57-65). Ho fails to teach a language model that utilizes at least one neighboring word in common sentence. Chang teaches the language system includes a sentence-based search engine to derive the language characters based on context of the input string within one or more words of a common sentence (see col. 2, lines 3-19). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Chang into the system of Ho in order to increase the ratio of hitting the right character.

As to claim 26, the combination of Ho and Chang inherently teaches a mobile device as cited in claim 24, embodied as a mobile phone.



4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al (US 6,307,541) in view of Kantrowitz (US 6,292,772).

As to claim 8, Ho fails to teach a mobile device as recited in claim 1, wherein the language system includes a character-based bigram language model and a word-based N-gram language model, where  $N > 2$ . Kantrowitz teaches a character-based bigram language model and a word-based N-gram language model, where  $N > 2$  (see col. 2, line 50- col.3, line5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Kantrowitz into the system of Ho in order to identify the language of individual words in isolation with high accuracy.

5. Claims 12, 13, 34, 35, 43, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al (US 6,307,541) in view of Kiraz (US 6,272,464).

As to claims 12, 13, 34, 35, 43, 44, Ho fails to teach a mobile device as recited in claim 1, wherein the language system comprises: a first name model to detect first names in the input string; a surname model to detect surnames in the input string; and a character-based bigram language model. Kiraz teaches a first name model to detect first names; a surname model to detect surnames; and a character-based bigram language model (see col. 4, line 49- col. 5, line 15 col. 6, line 61- col. 7, line 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Kiraz into the system of Ho in order to identify potential language origins of the name.

6. Claims 14, 27, 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al (US 6,307,541) in view of Matsuzuka et al (US 5,838,972).

As to claims 14, 27, 51, Ho teaches a mobile device as recited in claim 1, wherein the language system comprises: a resident language model residing on the mobile device to statistically derive the language characters using a first statistical language model (see fig. 4, number 420, col. 11, line 65- col. 12, line 6). Ho fails to teach a nonresident language model residing on a remote server, communicatively coupled to the mobile device, to statistically derive the language characters using a second statistical language model. Matsukara teaches a nonresident language model residing on a remote server to statistically derive the language characters using a second statistical language model (see col. 1, line 47- col. 2, line 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Matsukara into the system of Ho in order to provide additional server due to a large dictionary of words.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al (US 6,307,541) in view of Chang et al (US 5,987,447) and further in view of Hon et al (US 2001/0044724).

As to claim 25, the combination of Ho and Chang teaches a mobile device, wherein the alphabet is an English alphabet and the language characters are Chinese (see Ho col. 13, lines 13-16). The combination of Ho and Chang fails to teach the language characters are Chinese Hanzi (see page 1, paragraph 007). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Hon into the system of Ho in order to convert the Chinese language from one language character to another language character.

8. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al (US 6,307,541) in view of Matsuzuka et al (US 5,838,972) and further in view of Kantrowitz (US 6,292,772).

As to claim 28, the combination of Ho and Matsuzuka fails to teach a system as recited in claim 27, wherein the first statistical language model is a character-based bigram language model and the second statistical language model is a word-based N-gram language model, where  $N > 2$ . Kantrowitz teaches a character-based bigram language model and a word-based N-gram language model, where  $N > 2$  (see col. 2, line 50- col.3, line5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Kantrowitz into the system of Ho and Matsuzuka in order to identify the language of individual words in isolation with high accuracy.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ouyang (US 6,674,372) teaches Chinese character input method using numeric keys and apparatus thereof.

Gou (US 6,686,852) teaches keypad layout for alphabetic character input.

Chen (US 6,009,444) teaches text input device and method.

Hseih (US 6,636,163) teaches numeric key-based Chinese address inputting method.

Nakayama et al (US 4,531,119) teaches method and apparatus for key-inputting Kanji.

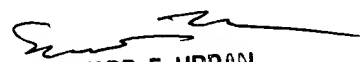
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T Le whose telephone number is 703-305-4538. The examiner can normally be reached on 08:00-05:00 (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 703-305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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